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09/719,903	12/20/2000	Stefan Etzold	ETZOLD ET AL	7099

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EXAMINER

SALVATORE, LYNDIA

ART UNIT

PAPER NUMBER

1771

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/719,903

Applicant(s)

ETZOLD ET AL.

Examiner

Lynda M Salvatore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/719,903.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: It is improper for the specification to refer to the claims. Page two of the specification refers to the claims. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 8 recites a vacuum source such as a "blower". It is unclear to the examiner if the applicant means to have a "vacuum" source or a "blower" source. Since claim 8 further claims fibers are "sucked" into the openings the examiner is assuming the applicant is referring to a vacuum source.

5. Claim 9 recites having a "pressure" source such as a blower. Reference number (34) is used to indicate the "vacuum" source or "blower" source. In this instance, the "pressure" source is used to blow the fibers out of the openings. It is unclear to the examiner if the applicant intends for this element (34) to have multi-functionality or function only as a vacuum, a blower, or a pressure source.

Claim Rejections - 35 USC § 102

6 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 (b) that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1,2 and 4-6 are rejected under 35 U.S.C. 103(b) as being anticipated by Drelich et al., US 5,244,711.

The Drelich et al. patent is directed to the assembly preparation of an apertured non-woven sheet material. The process involves depositing a web of air-laid fibers on a topographical support member having a pattern of perforations (Column 5, lines 14-16, Column 6, lines 52-55 and Column 9, lines 65-69). The fibers used to form the non-woven web may consist of cotton, rayon, nylon, or polyester (Column 5, lines 54-56). The web may also be formed by other methods such as carding, air-laying, wet-laying and melt-blowing (Column 5, lines 56-59). Drelich et al. teaches that the fibers are pre-soaked while on the topographical support member to ensure that they remain on the support member as the fabric is being treated (Column 6, lines 52-58). The non-woven may also be carded or meltblown fibers (Column 5, lines 14-15). In one embodiment, the topographical support member is a conveyor belt that transports the air-laid web of fibers to perforating fluid ejecting nozzles (Column 40-42 and Column 6, lines 55-60). A vacuum box located beneath the conveyor functions to dewater the air-laid fabric as it passes through the perforating fluid ejecting nozzles (Column 5, lines 18-20 and Column 6, lines 60-63). Once the vacuum sufficiently dewateres the fabric it is moved from the topographical support member and passed over a series of drying drums (Column 6, lines 63-63). Drelich et al. also

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teaches as a final step that the fabric may be further finished or processed (Column 6, lines 65-67).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 3,7, 10,11,16,19,20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whitehead et al., EP 0214608 in view of Drelich et al., US 5,244,711 as applied to claim 1 above.

The European patent application is directed to apertured non-woven webs (Title). Suitable non-woven webs include a uniform spun-bonded non-woven web, a bonded carded web, or a coform material (Page 5, line 29 and 35, Page 6. line 11). Also incorporated by reference into EP 0214608 is US 4,397,644, a sanitary napkin cover. The non-woven web material is a thermoplastic web having an open structure. Several types of bonding methods are disclosed such as the application of heat, hot calendar embossing, or by ultrasonic means (Page 6, lines 22-30). In addition, a binder may be added during the formation of the web or sprayed on after the web is formed, or added during the aperturing or consolidating steps (Page 19, lines 1-6). Whitehead et al. further discloses the advantages associated with the use of a binder such as not negatively effecting the cloth-like texture and filling voids to prevent liquid from altering the visual appearance (Page 18 and 19 lines 30-36 and line 1). The tensile strength claimed by the

applicant would inherently be present as a result of any pre-bonding method. Whitehead et al. does not expressly disclose the randomly laying fibers on a perforated belt, however, Drelich et al does teach depositing a web of air-laid fibers on a topographical support member having a pattern of perforations. Therefore, motivated by the various pre-bonding techniques taught by Whitehead et al., it would be obvious to one skilled in the art to pre-bond randomly deposited fibers using an air lay method as disclosed by Drelich et al. and produce the perforated non-woven webs of the Whitehead et al invention.

With respect to claims 7 and 10 the rotary perforating structure disclosed by Whitehead et al. contains a series of pins and another member having a series of indentions capable of receiving the pins. The rotary perforating device is capable of generating a combination of holes having a variety of shapes and patterns (Page 9, lines 10-20 and Figure 14). Whitehead et al. further teaches that some portion of the fibers pushed by the pins will enter the associated receiving member forming a ridge or rise around each of the holes on the surface of the web which engages the hole. Whitehead et al. discloses that these rises or ridges improve the cloth-like texture and feel (Page 14, lines 12-16). Therefore, motivated by the teachings of Whitehead et al., at the time the invention was made, it would have been obvious to person of ordinary skill in the art to use a rotary perforating member and an associated pin-receiving member as the perforating device to improve the physical properties of the textile.

With respect to claim 11, Whitehead discloses and illustrates in figure 14 a perforating roller device having a series of pins and another circular member having a series of indentions capable of receiving the pins. It would have been obvious to one having ordinary skill in the art to optimize the diameter size of the roller to control the production speed. It has been held that

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where the general conditions of a claim are disclosed in the prior art, discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Claim 16 limits the height of the barbs to. 5-5mm. Whitehead et al., teaches a pin height of .031 to .05 in figures 7 and 8. It would have been obvious to one having ordinary skill in the art to optimize the size of the pin/barb as a function of the fleece thickness i.e., single-layer or multi-layer. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Claim 19 limits the diameter of the hole size to a range of. 5-5mm. Whitehead et al. teaches hole diameters of approximately .005 inch. It would have been obvious to one having ordinary skill in the art to optimize the diameter of the hole size to create a material of desirable porosity. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Claim 20 and 21 limits the bonding the surface to 3-40% and the number of bonding points to a range of 20-120 per square centimeter. Whitehead et al. teaches the degree of perforation on the non-woven web may range for about 20-55% of the available surface area (Page 18, lines 21-24). Whitehead et al. further teaches the design pattern for apertured holes on a sanitary napkin do not extend the full width. The aperturing is generally about .75 inch to 2.0 wide on each side (Page 21, lines 20-25). It would have been obvious to one having ordinary skill in the art to optimize the percent of bonding surface as well as the number of bonding points

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to, prevent the material from possibly returning to its original configuration, add texture or give the web some specialized functionality. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

10. Claims 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whitehead et al., EP 0214608 in view of Drelich et al., US 5,244,711 as applied to claims 1 and 7 above.

Whitehead et al, does not expressly the use of a vacuum opposite the perforating device, however, Drelich et al. discloses a vacuum box located beneath the conveyor functioning to dewater the air-laid fabric as it passes through the perforating fluid ejecting nozzles. Motivated by the teachings of Whitehead et al. at the time the invention was made it would have obvious to one of ordinary skill in the art to supply a vacuum positioned in the area opposite of the perforating device to dewater and impact the fiber arrangement such as the one used by Drelich et al.

11. Claims 8,9 and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drelich et al., US 5,244,711 in view of Whitehead et al., EP 0214608 as applied to claim 7 above and further in view of Karger et al., Patent Specification 1224786.

Drelich et al. does not disclose a pressure source to redirect the fibers or the use of barbs to perforate the fabric, however, the invention disclosed by Karger et al. which relates to fabricating high strength fiber sheets having holes or apertures (Column 1, lines 10-14) discusses a plate having conical perforating tips and a fan to direct fibers. According to one aspect of the invention the fleece is placed in a mould and perforated by means of a perforating device (Page

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5, lines 5-10). The perforation device generally comprises mandrels having conical tips, a compressing spring, a retaining plate, a rubber plate, and a pressure plate as a suspended assembly above the raster hole plate (Figure 2, Page 5 lines 5-40). In practice the perforating plate assembly device descends and penetrates the fleece by its mandrels (Page 5, lines 21-25).

With respect to claims 8 and 9, Karger et al., further discloses the use of a fan beneath the raster hole plate which functions to suck an air stream through the holes during perforation to secure the fleece to the hole plate. Alternatively, the direction of airflow may be reversed by a pivoting air flap element (Page 5, lines 15-17, Figure 2).

Motivated by the teachings of Karger et al. to use a fan to either suck an air stream through the holes or use a flap element to redirect the flow of air it would have been obvious to one having ordinary skill in the art to modify the vacuum source of Drelich to have the ability to be both a pressure source and a vacuum source.

With respect to claims 14 and 15 the Karger reference teaches conical tips as the perforating means instead of having an involuted or ogival cross section. It would have been obvious to one of ordinary skill in the art to use barbs of different shapes as matter of design choice to produce fibrous webs having shaped hole properties since such a modification would have involved a mere change in the shape of the component. A change in shape is generally recognized as being within the level of ordinary skill in the art. *In re Dailey* 149 USPQ 47

Claim 16 further limits the size range of the barbs. It would have been obvious to one having ordinary skill in the art to optimize the size of the barb as a function of the fleece thickness i.e., single-layer or multi-layer. It has been held that where the general conditions of a

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claim are disclosed in the prior art, discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

12. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drelich et al., US 5,244,711 in view of Whitehead et al. as applied to claim 1 above and further in view of Griswold et al., US 3,081,515.

Claims 22 and 23 limit the shape of the hole structures and the distance between individual hole structures. Drelich et al. does not disclose having a specialized pattern of apertures, however, figures 14,16 and 18 of the Griswold et al. patent illustrate a pattern of non-circular hole structures. Figures 26 and 27 illustrate a pattern of irregular hole structures. It would have been obvious to one of ordinary skill in the art to arrange barbs of different geometrical shapes as matter of design choice to produce fibrous webs having irregular configurations and shapes. Such a modification would have involved a mere change in the shape of the component. A change in shape is generally recognized as being within the level of ordinary skill in the art. *In re Dailey* 149 USPQ 47

13. Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drelich et al., US 5,244,711 as applied to claim 1 above and further in view of Srinivasan et al., US 5,830, 555.

Drelich et al. does not teach a multi-layer web composite. However, the patent issued to Srinivasan et al. teaches apertured non-woven fabrics comprising one or two outer webs and a film layer sandwiched between (Abstract). A calendar roll simultaneously generates apertures to the passing non-woven web as well as providing heat and pressure to bond the layers together. (Abstract and Figure 2). Srinivasan et al. discloses that the typical aperture area of a non-woven

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web is 1-50%, however it may be tailored as needed to any shape, size, open area percentage by modifying the calendar roll, bond pattern or process (Column 8, lines 7-14 and Table 5). Figures 9-12 illustrate samples of apertured non-woven fabrics having circular, oval, or diamond shapes. The aperture size and width disclosed by Srinivasan et al. vary from .5-2.5 mm and .25-1.0 mm respectively. Srinivasan et al. further discloses that apertures of larger size are under development (Column 8, lines 17-20 and Table 5). Motivated by the production process capabilities taught by Srinivasan et al., it would be obvious to one of ordinary skill in the art to further modify the production process taught by Drelich et al. to produce a multi-layered apertured non-woven web.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynda M Salvatore whose telephone number is 703-305-4070. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-³⁰⁸⁻⁰⁶⁶¹~~555-5555~~.

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May 20, 2002


CHERYL A. JUSKA
PRIMARY EXAMINER